

CLAIMS

We claim:

- 5 1. An inspection device including:
 - a light source;
 - a pellicle beamsplitter for receiving light from the light source and
 - redirecting said light;
 - an aperture array for receiving light from the pellicle beamsplitter;
 - a dual telecentric object reimager including a plurality of lenses;
 - 10 a telecentric camera imager including a plurality of lenses; and
 - a camera for collecting focused light.

- 15 2. A process of inspecting a surface including bumps thereon, the process comprising:
 - scanning a surface using optics and a camera capable of
 - determining light intensity for each pixel viewed;
 - measuring the light intensity at each pixel at a first elevation;
 - measuring the light intensity at each pixel at a second elevation;
 - and
 - 20 determining the elevation of the surface using a Gaussian curve based upon the light intensities measured at the first and second elevations at each pixel .

- 25 3. The process of claim 2 further comprising:
 - scanning at least particular portions of a surface believed to
 - contain protrusions extending outward from the surface using optics and a
 - camera capable of determining light intensity for each pixel viewed;
 - measuring the light intensity at each pixel at a third elevation;
 - measuring the light intensity at each pixel at a fourth elevation; and
 - 30 determining the elevation of the protrusions using a Gaussian curve based upon the light intensities measured at the third and fourth elevations at each pixel .

- 35 4. The process of claim 3 further comprising:
 - determining the height of a protrusion by calculating the difference
 - between the elevation of a protrusion and the elevation of the surface.

5. The process of claim 2 wherein an inspection device is used to perform the scanning and includes:

a light source;

5 a beamsplitter for receiving light from the light source and redirecting said light;

an aperture array for receiving light from the pellicle beamsplitter;

at least one reimager; and

a camera for collecting focused light.

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